CURRICULUM VITÆ

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Employment

Jan 2012–present **Staff Scientist, Los Alamos National Laboratory,** Los Alamos, New Mexico.
Theoretical Division, T-2 Group (Nuclear, Particle, Astrophysics and Cosmology).

Educational Background

2000–2005 **California Institute of Technology**, Pasadena, California.
Ph.D. in Physics received June 10, 2005.
Thesis title: *Probing Physics in the Standard Model and Beyond with Electroweak Baryogenesis and Effective Theories of the Strong Interactions.*
Thesis Advisors: Profs. Mark Wise and Michael Ramsey-Musolf.

1996–2000 **Reed College**, Portland, Oregon.
Bachelor of Arts in Mathematics-Physics received January 10, 2000.
Senior Thesis: *Supersymmetric Quantum Mechanics.*
Thesis Advisors: Profs. Nicholas Wheeler and Thomas Wieting.

1992–1996 **Gresham High School**, Gresham, Oregon.

Research Experience

Sep 2010–Jan 2012 **Center for Theoretical Physics, Laboratory for Nuclear Science, Massachusetts Institute of Technology**, Cambridge, Massachusetts.
Senior Postdoctoral Associate.

Oct 2007–Aug 2010 **University of California and Lawrence Berkeley National Laboratory**, Berkeley, California.
Postdoctoral Scholar in Theoretical Physics.

Sep 2005–Sep 2007 **Institute for Nuclear Theory, University of Washington**, Seattle, Washington.
Postdoctoral Research Associate.

Jun–Aug 1998 **University of Washington**, Seattle, Washington.
Research Experience for Undergraduates.
Research topic: *Search for a Permanent Electric Dipole Moment in Mercury-199.*

Teaching, Service and Other Professional Experience

2013	Lecturer, Summer School on Nonperturbative QCD, International Center for Theoretical Physics South American Institute for Fundamental Research, São Paulo, Brazil
2013	LANL LDRD Exploratory Research Proposal Review Committee, NPAC Category
2011	Organizer, Boston Jet Physics Workshop, Harvard University, Jan 12–14, 2011
2010	Substitute Lecturer, Physics 8.324, Relativistic Quantum Field Theory II, MIT
2009	Private tutor, high school AP Physics.
2008–	Referee for Physical Review D, Physics Letters B, Journal of High-Energy Physics.
2008–2009	Organizer, UC Berkeley Particle Theory Seminars
2006	Substitute Lecturer, Physics 507A (Group Theory), University of Washington.
2004–2005	Teaching Assistant, Physics 2 recitation, Caltech.
1999	President, Reed College Chapter, Society of Physics Students.
1998–1999	Teaching Assistant, Physics 311 & 342 (Classical and Quantum Mechanics), Reed College.
1996–1999	Assistant Coach, Speech & Debate Team, Gresham High School, Gresham, Oregon.

Honors and Awards

2001	National Defense Science and Engineering Graduate Fellowship.
2000	National Science Foundation Graduate Fellowship.
2000	Leroy Apker Award, finalist (American Physical Society).
2000	Society of Physics Students Leadership Scholarship
2000	Admitted to ΦBK.
1998	Barry M. Goldwater Scholarship in Science, Mathematics, and Engineering.

Publications in Peer-Reviewed Journals

INSPIRE publication record at `inspirehep.net/author/C.Lee.2/`

1. D. Kang, C. Lee, and I. W. Stewart, "Using 1-Jettiness to Measure 2 Jets in DIS 3 Ways," submitted to Phys. Rev. D [arXiv:1303.6952].

2. A. Altheimer, C. Lee, *et al.*, "Jet Substructure at the Tevatron and LHC: new results, new tools, new benchmarks," J. Phys. G: Nucl. Part. Phys. **39**, 063001 (2012) [arXiv:1201.0008]. TOPCITE 50+

3. A. Hornig, C. Lee, J. Walsh, and S. Zuberi, "Double Non-Global Logarithms In-N-Out of Jets," JHEP **01** (2012) 149 [arXiv:1110.0004].

4. V. Cirigliano, C. Lee, and S. Tulin, "Resonant Flavor Oscillations in Electroweak Baryogenesis," Phys. Rev. D **84**, 056006 (2011) [arXiv:1106.0747].

5. A. Hornig, C. Lee, I. W. Stewart, J. Walsh, and S. Zuberi, "Non-global Structure of the $\mathcal{O}(\alpha_s^2)$ Dijet Soft Function," JHEP **08** (2011) 054 [arXiv:1105.4628].

6. S. Ellis, A. Hornig, C. Lee, C. Vermilion, and J. Walsh, "Jet Shapes and Jet Algorithms in SCET," JHEP **11** (2010), 101 [arXiv:1001.0014]. TOPCITE 50+

7. V. Cirigliano, C. Lee, M. J. Ramsey-Musolf, and S. Tulin, "Flavored Quantum Boltzmann Equations," Phys. Rev. D **81**, 103503 (2010) [arXiv:0912.3523]

8. S. D. Ellis, A. Hornig, C. Lee, C. K. Vermilion, and J. R. Walsh, "Consistent Factorization of Jet Observables in Multijet Cross-Sections," Phys. Lett. B **689**, 82 (2010) [arXiv:0912.0262].

9. A. Hornig, C. Lee, and G. Ovanesyan, "Effective Predictions of Event Shapes: Factorized, Resummed, and Gapped Angularity Distributions," JHEP **05** (2009) 122 [arXiv:0901.3780].

10. A. Hornig, C. Lee, and G. Ovanesyan, "Infrared Safety in Factorized Hard Scattering Cross-Sections," Phys. Lett. B **677**, 272 (2009) [arXiv:0901.1897].

11. C. W. Bauer, S. Fleming, C. Lee, and G. Sterman, "Factorization of e^+e^- Event Shape Distributions with Hadronic Final States in Soft Collinear Effective Theory," Phys. Rev. D **78**, 034027 (2008) [arXiv:0801.4569].

12. C. Lee and G. Sterman, "Momentum Flow Correlations from Event Shapes: Factorized Soft Gluons and Soft-Collinear Effective Theory," Phys. Rev. D **75**, 014022 (2007) [arXiv:hep-ph/0611061]. TOPCITE 50+

13. V. Cirigliano, C. Lee, M. J. Ramsey-Musolf, and S. Tulin, "Yukawa and Tri-scalar Processes in Electroweak Baryogenesis," Phys. Rev. D **73**, 115009 (2006) [arXiv:hep-ph/0603058].

14. C. Lee, V. Cirigliano, and M. J. Ramsey-Musolf, "Resonant Relaxation in Electroweak Baryogenesis," Phys. Rev. D **71**, 075010 (2005) [arXiv:hep-ph/0412354]. TOPCITE 50+

15. S. Fleming, C. Lee, and A. K. Leibovich, "Exclusive Radiative Decays of Upsilon in SCET," Phys. Rev. D **71**, 074002 (2005) [arXiv:hep-ph/0411180].

16. C. W. Bauer, C. Lee, A. V. Manohar, and M. B. Wise, "Enhanced Nonperturbative Effects in Z Decays to Hadrons," Phys. Rev. D **70**, 034014 (2004) [arXiv:hep-ph/0309278]. TOPCITE 50+

17. C. Lee, "Equivalence of Logarithmic Perturbation Theory and Expansion of the Superpotential in Supersymmetric Quantum Mechanics," Phys. Lett. A **267**, 101 (2000).

Other Publications

- C. Lee, "Universal Nonperturbative Effects in Event Shapes from Soft-Collinear Effective Theory," Mod. Phys. Lett. A **22**, 835–851 (2007) [arXiv:hep-ph/0703030].

- C. Lee, "Probing Physics in the Standard Model and Beyond with Electroweak Baryogenesis and Effective Theories of the Strong Interactions," Ph.D. thesis, California Institute of Technology, May 2005 [arXiv:hep-ph/0507111].

Conference Proceedings

- F. D'Eramo, C. Lee, M. Lekaveckas, H. Liu, and K. Rajagopal, "Momentum Broadening in Weakly Coupled Quark-Gluon Plasma," in the Proceedings of PANIC 2011: 19th Particles & Nuclei International Conference, MIT, Cambridge, MA, 24–29 Jul 2011, preprint MIT-CTP 4312.

- C. Lee, "Peeking Inside Jets for Clues of New Physics," in the Proceedings of PANIC 2011: 19th Particles & Nuclei International Conference, MIT, Cambridge, MA, 24–29 Jul 2011, preprint MIT-CTP 4308.

- C. Lee, A. Hornig, and G. Ovanesyan, "Factorized, Resummed, and Gapped Angularity Distributions in SCET," in the Proceedings of CIPANP 2009: Tenth Conference on Intersections of Particle and Nuclear Physics, La Jolla, California, 26–31 May 2009.

- C. Lee, A. Hornig, and G. Ovanesyan, "Probing the Structure of Jets: Factorized and Resummed Angularity Distributions in SCET," in the Proceedings of EFT09, International Workshop on Effective Field Theories, Valencia, Spain, 2–6 Feb. 2009 [arXiv:0905.0168].

- C. Lee, "CP Violating Sources for Electroweak Baryogenesis," in the Proceedings of SUSY08, Seoul, Korea, 15–21 Jun. 2008, AIP Conf. Proc. **1078**, 503–505 (2009).

- C. Lee, "Baryogenesis and EDMs: Constraining CP Violation Beyond the Standard Model," in the Proceedings of the 2nd Meeting of the APS Topical Group on Hadronic Physics, Nashville, Tennessee, 22–24 Oct. 2006, J. Phys. Conf. Ser. **69**, 012036 (2007).

- C. Lee, "Resonantly Enhanced CP Violation and Relaxation in Electroweak Baryogenesis," in the Proceedings of SUSY06, Irvine, California, 12–17 Jun. 2006, AIP Conf. Proc. **903**, 643–647 (2007).

- C. Lee and G. Sterman, "Universality of Nonperturbative Effects in Event Shapes," in the Proceedings of the FRIF Workshop on First Principles Non-perturbative QCD of Hadron Jets (LPTHE, Paris, 12–14 Jan. 2006) [arXiv:hep-ph/0603066].

- C. Lee, "Nonperturbative Effects in Event Shapes from Soft-Collinear Effective Theory," in the Proceedings of the FRIF Workshop on First Principles Non-perturbative QCD of Hadron Jets (LPTHE, Paris, 12–14 Jan. 2006) [arXiv:hep-ph/0603065].

Talks

1. April 2013, P-25 Seminar, LANL, "Precision Jet Physics in High-Energy Collisions"
2. March 2013, invited talk at SCET2013 Workshop, Duke University, "Using 1-Jettiness to Measure 2 Jets in DIS in 3 Ways"
3. March 2013, invited talk at Cosmic Frontier Workshop, SLAC, "Resonant Flavor Oscillations: A New Source for Electroweak Baryogenesis"
4. January 2013, Particle Physics Seminar, Korea Institute for Advanced Study, Seoul, Korea, "An Enhanced Source for Electroweak Baryogenesis"
5. January 2013, Particle Theory Seminar, Seoul National University, "An Enhanced Source for Electroweak Baryogenesis"
6. December 2012, invited talk at EI-K Workshop, Jeonbuk National University, Jeonju, Korea, "The Origin and Structure of Matter"
7. October 2012, contributed talk at APS DNP Meeting, Newport Beach, California, "Exclusive Jets in Deep Inelastic Scattering"
8. October 2012, High Energy Physics Seminar, University of California at San Diego, "An Enhanced Source for Electroweak Baryogenesis"
9. October 2012, NUPAC Seminar, University of New Mexico, "Exclusive Jets in Deep Inelastic Scattering"
10. September 2012, T-2 Seminar, Los Alamos National Laboratory, "Exclusive Jets in Deep Inelastic Scattering"
11. July 2012, mini-lecture at 2012 National Nuclear Physics Summer School, Santa Fe, New Mexico, "The Higgs Boson"
12. March 2012, invited talk at SCET Workshop 2012, Universidad Complutense de Madrid, Spain, "Non-Global Logs In-N-Out of Jets"
13. October 2011, CTP Graduate Student Lunch Club, MIT, "Skinny Jets and Large Logs: Resumming Perturbative Series Effectively"
14. September 2011, invited talk at INT program on Frontiers of QCD, "Probing Jets More Exclusively, Effectively"
15. July 2011, invited talk at PANIC11 Conference, MIT, "Peeking Inside Jets for Clues of New Physics"
16. May 2011, invited talk at BOOST 2011 workshop, Princeton Center for Theoretical Physics, "Logs, Non-Global Logs, and Non-Global Non-Logs in Dijet Observables"
17. March 2011, invited talk at SCET Workshop 2011, Carnegie Mellon University, "Non-Global Logs in SCET"
18. February 2011, Particle and Fields Seminar, Boston University, "An Enhanced Source for Electroweak Baryogenesis"
19. February 2011, Nuclear Theory Seminar, Los Alamos National Laboratory, "Precision Jet Physics Using Effective Field Theory"
20. February 2011, invited talk at Aspen Winter Conference on New Data from the Energy Frontier, "Jets and Jet Shapes in Effective Field Theory"
21. February 2011, High Energy Theory Seminar, Harvard University, "A New Source for Electroweak Baryogenesis"

22. January 2011, Particle Theory Seminar, University of Washington, “A New Source for Electroweak Baryogenesis”

23. December 2010, Physics Department Colloquium, University of Colorado, Boulder, “Jets as Probes of the Fundamental Forces of Nature”

24. September 2010, CTP Graduate Student Lunch Club, MIT, “The Generation of Matter”

25. July 2010, invited talk at Santa Fe 2010 Meeting, “Jets in SCET”

26. May 2010, Joint Theory Seminar, University of California, Davis, “Jets and Jet Shapes in SCET”

27. April 2010, Nuclear and Particle Theory Seminar, Massachusetts Institute of Technology, “Jet Shapes as Probes of Jet Substructure”

28. March 2010, Particle Physics Seminar, Carnegie Mellon University, “Jet Shapes as Probes of Jet Substructure”

29. February 2010, Joint Center for High-Energy Physics and Institute of Theoretical Science Seminar, University of Oregon, “Jet Shapes as Probes of Jet Substructure”

30. February 2010, Physics Department Colloquium, University of Oregon, “The Generation of Matter”

31. January 2010, 4D Theory Seminar, Lawrence Berkeley National Laboratory, “Jet Shapes as Probes of Jet Substructure”

32. January 2010, invited talk, Joint Theoretical-Experimental Workshop on Jets and Jet Substructure at the LHC, University of Washington, “A Theoretical Toolkit to Probe the Structure of Jets”

33. August 2009, Theoretical Physics Seminar, Los Alamos National Laboratory, “Probing the Structure of Jets with Event Shapes and Effective Field Theory”

34. May 2009, invited talk at CIPANP 2009, La Jolla, California, “Factorized, Resummed, and Gapped Angularity Distributions”

35. February 2009, contributed talk at EFT09, IFIN, Valencia, Spain, "Probing the Structure of Quark Jets in Soft-Collinear Effective Theory"

36. January 2009, Theoretical Physics Seminar, CPPP, Université Catholique de Louvain, "Probing the Structure of Jets with Effective Field Theory"

37. January 2009, Theoretical Physics Seminar, IPhT, CEA, Saclay, France, "Probing the Structure of Jets with Effective Field Theory"

38. November 2008, Theoretical Elementary Particle Physics Seminar, UCLA, “Probing the Structure of Jets: Factorization and Resummation of Event Shape Distributions”

39. September 2008, invited talk at INT Collider Physics Symposium, “Event Shapes from Soft Collinear Effective Theory”

40. June 2008, invited talk at Workshop on Effective Probes of QCD Matter, Duke University, “Event Shapes in SCET”

41. June 2008, contributed talk at SUSY08, Seoul, Korea, “CP-Violating Sources for Electroweak Baryogenesis”

42. June 2008, Nuclear and Hadron Physics Seminar, Yonsei University, Seoul, Korea, “Disentangling the Strong Interactions in Quark Jets”

43. April 2008, Pheno/NPAC Seminar, University of Wisconsin, Madison, “Disentangling the Strong Interactions in Two-Jet Event Shapes”

44. April 2008, invited talk at SCET Workshop 2008, Schloss Waldthausen, Mainz, Germany, “Factorization of Event Shape Distributions in SCET”

45. February 2008, Nuclear Physics Seminar, Los Alamos National Laboratory, "Disentangling the Strong Interactions in Two-Jet Event Shapes"

46. January 2008, 4D Seminar, Lawrence Berkeley National Laboratory, "Factorization of e^+e^- Event Shape Distributions"

47. December 2007, CTP Seminar, Berkeley Center for Theoretical Physics, "Supersymmetric Electroweak Baryogenesis"

48. November 2007, Institute of Theoretical Science Seminar, University of Oregon, "Disentangling the Strong Interactions in Quark Jets"

49. November 2007, High Energy Theory Seminar, University of California, San Diego, "Electroweak Baryogenesis Beyond the Standard Model"

50. May 2007, High Energy Physics Seminar, California Institute of Technology, "Universal Nonperturbative Effects in Two-Jet Event Shapes"

51. March 2007, invited talk at SCET Workshop 2007, Lawrence Berkeley National Laboratory, "Event Shapes and SCET"

52. March 2007, Theory Seminar, Stanford Linear Accelerator Center, "Universal Nonperturbative Effects in Two-Jet Event Shapes"

53. March 2007, invited talk at INT Workshop on EDMs and CP Violation, "Electroweak Baryogenesis"

54. January 2007, invited talk at Ringberg Workshop on Nonperturbative QCD of Jets, Schloss Ringberg, Munich, Germany, "Universal Nonperturbative Effects in Two-Jet Event Shapes"

55. October 2006, invited talk at 2nd Meeting of the APS Topical Group on Hadronic Physics, Nashville, Tennessee, "Baryogenesis and EDMs: Constraining CP Violation Beyond the Standard Model"

56. June 2006, contributed talk at SUSY06, Irvine, California, "Resonantly Enhanced CP Violation and Relaxation in Electroweak Baryogenesis"

57. April 2006, LEPP Particle Theory Seminar, Cornell University, "Universality of Nonperturbative Effects in Event Shapes from SCET"

58. April 2006, Particle Theory Seminar, University of Washington, "Universality of Nonperturbative Effects in Event Shapes from SCET"

59. March 2006, invited talk at SCET Workshop 2006, University of Arizona, "Universality of Nonperturbative Effects in Event Shapes"

60. January 2006, Theoretical Physics Seminar, Université Libre de Bruxelles, Belgium, "Electroweak Baryogenesis and Electric Dipole Moments"

61. January 2006, invited talk at FRIF Workshop on First Principles Non-perturbative QCD of Hadron Jets, LPTHE, University of Paris, "Nonperturbative Effects from Soft-Collinear Effective Theory"

62. October 2005, invited talk at TPFNP Workshop, University of South Carolina, "Non-equilibrium QFT Applied to Electroweak Baryogenesis"

63. May 2005, INT Seminar, University of Washington, "Jet Physics in SCET"

64. April 2005, TRIUMF Theory Seminar, "Constraints on Supersymmetric Electroweak Baryogenesis"

65. March 2005, INT Seminar, University of Washington, "Exclusive Radiative Decays of Upsilon in SCET"

66. March 2005, Reed College Physics Seminar, "The Supersymmetric Origin of Matter"

67. January 2005, INT Seminar, "Hadronic Decays of Z Bosons in EFT"

68. January 2005, University of Maryland Theoretical Quarks, Hadrons & and Nuclei Seminar, "Decays of Z Bosons and Upsilon Mesons in EFT"

69. June 2004, TASI Student Seminar, University of Colorado, Boulder, Colorado, "Jet Physics and SCET," contributed talk.

70. September 2000, APS Apker Award Interview, Washington, DC, "Supersymmetric Quantum Mechanics"

71. May 2000, APS Meeting, Long Beach, California, "Perturbation Theory in Supersymmetric Quantum Mechanics," contributed talk.

72. March 2000, Society of Physics Students (SPS) Zone Meeting, Lewis and Clark College, Portland, Oregon, "Perturbation Theory in Supersymmetric Quantum Mechanics," contributed talk.

73. January 2000, Reed College Physics Seminar, "Supersymmetric Quantum Mechanics"

References

Professor Mark B. Wise
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E-mail: wise@theory.caltech.edu

Professor Michael J. Ramsey-Musolf
Department of Physics
University of Wisconsin
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Professor Stephen D. Ellis
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Professor George Sterman
C. N. Yang Institute for Theoretical Physics
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